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10/512,018	05/24/2005	Crescenzo Coppola	23083	8466
535 7590 06/14/2007 K.F. ROSS P.C. 5683 RIVERDALE AVENUE SUITE 203 BOX 900 BRONX, NY 10471-0900			EXAMINER LI, GUANG W	
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/512,018

Applicant(s)

COPPOLA ET AL.

Examiner

Guang Li

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>10/19/2004</u> . | 6) <input type="checkbox"/> Other: ____.  |

### **DETAILED ACTION**

1. The instant application having Application No. 10/512018 has a total of 19 claims pending in the application; there are 3 independent claims and 16 dependent claims, all of which are ready for examination by the examiner.

#### **Oath/Declaration**

2. The applicant's oath/declaration has been reviewed by the examiner and is found to conform to the requirements prescribed in **37 C.F.R. 1.63**.

#### **Priority**

3. As required by **M.P.E.P. 201.14(c)**, acknowledgement is made of applicant's claim for priority based on applications filed on 04/19/2002 (ITALY TO2002A00341).

#### **Information Disclosure Statement**

4. As required by **M.P.E.P. 609(C)**, the applicant's submissions of the Information Disclosure Statements dated 10/19/2004 is acknowledged by the examiner and the cited references have been considered in the examination of the claims now pending. As required by **M.P.E.P 609 C(2)**, a copy of the PTOL-1449 initialed.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-2,4-5,7-9 and 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Bowman-Amuah (US6,289,382).

7. Regarding claim 1, Bowman-Amuah teaches method for implementing internetworking of a set of Content Delivery Networks CDN (CDN1, CDN2) (**batcher see Fig 187**), the networks (**A plurality of interfaces are provided with access allowed to plurality of different set of services from each of the interfaces see abstract**) in said set being provided with respective caches (**some architectures provide as a set of memory management APIs to create the cache area in the client platforms memory for the data to reside see col.102 line 64**, respective Directory Name Service or Domain Name Servers (DNS) (**Domain name service resolves a pronounceable name into an IP address and vice versa see col. 63 lines 39-67**) and respective content distribution systems to respective clients (**content providers the seek to package the requested information for automatic distribution to the user's PC see col.107 lines 20-27**), as well as interface components (CIG) susceptible of being each associated to a respective network (CDN1) in said set of networks and co-operating with at least one similar interface component (CIG) associated to another network (CDN2) in said set of networks (**Plurality of interfaces are provided with access allowed to a plurality of different set of services from each of interface and each interface has a unique set of services associated therewith see abstract**), the method comprising the step of

collecting in said interface components (CIG) routing data related to the association of said contents and the caches which contain them (**routing information tables within routers: “each router periodically informs neighboring routers as to the contents of routing table” see col.85 lines 18-43**); transferring (DNSI) said routing data (**Workflow service router work to appropriate workflow queues see col.115 lines 47-52**) from at least one of said interface components (CIG) to the directory name service or domain name server (DNS) of the respective network (**Name service can be used by other communication service for message service and terminal services see col.64 lines 10-22**), whereby access by the client of said respective network of contents of the networks in said set of CDN (CDN1, CDN2) is implemented through the Directory Name Service or Domain Name Server (DNS) of said network (**all the data in a data structure 11900 from a client 11902 to a server 11904 and visa-versa see col. 242 lines 16-21; Fig.118-121**).

8. Regarding claim 2, Bowman–Amuah teaches the method according to claim 1 wherein the following steps are performed by at least one of said interface components (CIG):

to receive data on the state of the cache and/or the contents of the respective network (**object is retrieved from a data store and cached in operation see col. 284 lines 33-37**),

to determine whether said contents require an updating or not, and (**determined whether the information need to be updating savedatachange() or release method see col.296 lines 46-53**)

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to manage said updating by performing at least one step in the following group comprising: editing the respective database, editing the respective Directory Name Service tables, editing the respective log file archive, and forwarding an update request message to said at least one similar component **(queue management that provide access to workflow queues with are used to schedule work see col.117 lines 13-22).**

9. Regarding claims 4 and 5, they are rejected for the same reason as set forth hereinabove. Bowman-Amuah taught the claimed method, therefore Bowman teaches the claimed system.

10. Regarding claim 7, Bowman-Amuah teaches the interface component (CIG) for implementing Content Delivery Network CDN (CDN1, CDN2) internetworking **(A plurality of interfaces are provided with access allowed to plurality of different set of services from each of the interfaces see abstract),** the networks (CDN1, CDN2) being comprised in a set and being provided with respective caches **(some architectures provide as a set of memory management APIs to create the cache area in the client platforms memory for the data to reside see col.102 line 64) ,** respective Directory Name Service or Domain Name Servers (DNS) **(Domain name service resolves a pronounceable name into an IP address and vice versa see col. 63 lines 39-67)** and respective content distribution systems to respective clients **(content providers the seek to package the requested information for automatic distribution to the user's PC see col.107 lines 20-27),** said interface component (CIG) being susceptible of being associated to a respective network (CDN1) in said set

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of networks and co-operating with at least one similar interface component associated to another network (CDN2) in said set of networks (**Plurality of interfaces are provided with access allowed to a plurality of different set of services from each of interface and each interface has a unique set of services associated therewith see abstract**), said interface component (CIG) being configured to collect routing data related to the association of said contents and the caches which contain them (**routing information tables within routers: "each router periodically informs neighboring routers as to the contents of routing table" see col.85 lines 18-43**), said interface component (CIG) comprising:

at least a first interface module (RRI) for exchanging data with said at least one similar component (**interface module on the receiving system exchange information between interfaces see col.209 lines 13-20**),

a second interface module (DNSI) for interfacing with the Directory Name Service (DNS) of the respective network (**Directory services managing information about network resources involves a variety of processes ranging from simple name/address resolution see col.55 lines 55-61**), and

a core (RRP) for collecting and processing the data received by the component and routing the respective requests (**interfaces that collecting and processing the data in both server and client see Fig.88 item 8800**), whereby said interface component (CIG) is susceptible of transferring said routing data (**Workflow service router work to appropriate workflow queues see col.115 lines 47-52**) to the directory name Service or Domain Name Server (DNS) of the respective network via

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said second interface module (DNSI) **(Name service can be used by other communication service for message service and terminal services see col.64 lines 10-22).**

11. Regarding claim 8, Bowman–Amuah teaches the interface component according to claim 7 is configured to be controlled by a monitoring system **(Environment verification services see col.99 line 18)** and comprises:

a third interface module (DII) for retrieving data on the availability of contents from the content distribution system on the respective network, and a fourth interface module (MII) for interacting with said monitoring system **(Environment verification services ensure functionality by monitoring, identifying and validating environment integrity prior and during program execution see col.99 lines 19-27).**

12. Regarding claim 9, claim 9 is rejected for the same reason as claim 2.

13. Regarding claim 15, Bowman–Amuah teaches the interface component according to claim 8 wherein said fourth interface module (MII) is configured to transfer to said core (RRP) signals indicating quantities from the following group comprising:

IP address of the cache to which the message refers, percentage of CPU used by the cache, percentage of RAM used by the cache, percentage of disc used by the cache, percentage of users connected in relation to the maximum capacity of the involved cache service **(Utilization based “It may be based on a combination of current CPU utilization, kernel scheduling run-queue length, current network traffic at that node, number of requests currently being serviced, or any other factors particular to the environment” see col.268 lines 64).**



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14. Regarding claim 16, Bowman–Amuah teaches the interface component according to claim 8 wherein said third interface module (DII) is configured to send to said core (RRP) signals indicating quantities from the following group comprising:

URL identifying the content to which the message refers (**Database services providing access to a local or a remote database, maintaining integrity of the data within the database and supporting ability to store and identify data in the physical platform see col.48 lines 56-64).**

list of IP addresses of the caches of said content (**Microsoft's Windows Internet Name Service (WINS)--WINS is Microsoft's proprietary method for mapping IP addresses see col. 63 lines 63-67),**

level of confidence of said content (**Security components can restrict access to functions within an application based on a users security level see col. 52 lines 38-51),**

level of availability of said content (**security component can restrict access to functions within an application based on a users security level see col.52 lines 38-45),**

cache state (**Code table component is necessary to cache the data in the memory for faster access and less database hit see col.102 lines 64-67),**

life time of routing data (**status report on individual cases can sharpen customer response times while performance monitoring see col.117 lines 24-37).**

15. Regarding claim 17, Bowman–Amuah teaches the interface component according to claim 16 wherein said quantity identifying the level of confidence of the

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content is susceptible of assuming distinct levels corresponding to at least one first level of confidence in the group comprising:

a first level of confidence indicating that the contents may be exchanged by all networks in said set of networks, and a second level of confidence indicating that the contents may be exchanged on by a selectively determined subset of networks in said set of networks **(Three different kind of level security toward security component: High level security is whether the user has fully access to run the application; next level check user has the access to the data; lowest is whether access to the widgets on a window see col.52 lines 38-45).**

### ***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 3,6 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman-Amuah (US 6,289,382) in view of M.Green (Content Internetworking Architectural Overview)

18. Regarding claim 3 and 6, Bowman teaches a method and system for implementing internetworking of a set of content delivery networks, the networks in said set being provided with respective caches, respective Directory Name Service or

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Domain Servers and respective content distribution system to respective clients with at least one of collect routing data referred similar component in set. The routing component servers' clients is this implemented through the Directory Name Service of the respective network. Bowman does not explicitly disclose the interface components communicate via a CNAP protocol.

M.Green teaches a system for implement internetworking of a set of Content Delivery Networks, the networks in said set being provided with respective caches, respective to Directory Name Service. M.Green further teaches the interface components (CIG) communicate via a CNAP protocol **(A common protocol for the advertisement of content see Page 21 section 4.4.3 Advertising Requirements)**.

M.Green further teaches the advantage of overall architectural structure and fundamental building blocks used in the composition of content internetworking and protocol requirements for individual core elements that constitute the building blocks of the Content Internetworking system.

It would have been obvious to one of ordinary skill in the art, having the teachings of Bowman-Amuah and M.Green before them at the time the invention was made to modify the content delivery network of Bowman to include interface components communicate via a CNAP protocol as taught by M.Green.

One of ordinary skill in the art would have been motivated to make this modification in order to provide more efficient delivery protocol for the content networks in view of M.Green.

19. Regarding claim 10, Bowman-Amuah teaches the interface component for implementing Content Delivery Network CDN internetworking, the networks (CDN1, CDN2) being comprised in a set and being provided with respective caches, respective Directory Name Service or Domain Name Servers (DNS), said interface component (CIG) being susceptible of being associated to a respective network (CDN1) in said set of networks and co-operating with at least one similar interface component associated to another network (CDN2) in said set of networks, said interface component (CIG) being configured to collect routing data related to the association of said contents and the caches which contain 4 interfaces module that able to exchanging data with other similar interfaces. Bowman does not explicitly disclose at least a first interface module is configure to communicate with a fist interface module of said at least one similar component via CNAP protocol.

M.Green teaches a system for implement internetworking of a set of Content Delivery Networks, the networks in said set being provided with respective caches, respective to Directory Name Service. M.Green further teaches the interface components (CIG) communicate via a CNAP protocol **(A common protocol for the advertisement of content see Page 21 section 4.4.3 Advertising Requirements).**

It would have been obvious to one of ordinary skill in the art, having the teachings of Bowman-Amuah and M.Green before them at the time the invention was made to modify the content delivery network of Bowman to include interface components communicate via a CNAP protocol as taught by M.Green.

One of ordinary skill in the art would have been motivated to make this modification in order to provide more efficient delivery protocol for the content networks in view of M.Green.

20. Regarding claim 11, Bowman-Amuah together with M.Green taught the method and system of content delivery system according to claim 10, as described above. Bowman-Amuah further teaches two systems communication via a stream0-based communication and using a common generic port to relay the meta-data information **(col.207 lines 65-67)**.

21. Regarding claim 12, Bowman-Amuah together with M.Green taught the method and system of content delivery system according to claim 10, as described above. Bowman-Amuah further teaches the first interface module comprising: teaches ID of the network in which interface component is associated, IP address of the computer hosting the local interface component **(Globally addressable interface services typically are used to obtain locally addressable interface by providing some key information to the service see col.220 lines 56-67)**, ID of interconnected system via said interface component and said at least one similar interface components **(Naming or trading service see col.220 lines 40-53; Fig.85-86)**, IP address of the remote interface components of said internetworking system **(Naming service returns the remote object reference for the customer interface see col.221 lines 41-59)**, level of confidences of the internetworking network connection **(Security components can restrict access to functions within an application based on a users security level see col. 52 lines 38-51)**,

at least one identification of physical characteristics, such as the geographical distance of connection between said interfacing component and said similar interface component **(switching is the process of receiving a packet, selecting an appropriate outgoing path, and sending the packet see col.84 lines 38-53)** .

22. Regarding claim 13, Bowman-Amuah together with M.Green taught the method and system of content delivery system according to claim 12, as described above.

M.Green further teaches the said first interface module is configured to exchange information with said at least one similar interface component via an IP transportation protocol such as the TCP protocol **(Content advertisement are user of TCP or SCTP as communication protocols see Page 21 section 4.4.3).**

23. Regarding claim 14, Bowman-Amuah together with M.Green taught the method and system of content delivery system according to claim 12, as described above.

Bowman-Amuah further teaches first module are configured to exchange signals indicating quantities selected from the following group:

URL identifying the content to which the message refers **(Database services providing access to a local or a remote database, maintaining integrity of the data within the database and supporting ability to store and identify data in the physical platform see col.48 lines 56-64).**

IP addresses of the caches which distributes the content **(Microsoft's Windows Internet Name Service (WINS)--WINS is Microsoft's proprietary method for mapping IP addresses see col. 63 lines 63-67),**

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ID of the content delivery network to which the cache belongs (**object Identity cache see col.284 lines 31-49**),

cache state, content state in the cache, (**Code table component is necessary to cache the data in the memory for faster access and less database hit see col.102 lines 64-67**),

life time of routing data (**status report on individual cases can sharpen customer response times while performance monitoring see col.117 lines 24-37**).

24. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bowman-Amuah (US 6,289,382) in view of M.Green (Content Internetworking Architectural Overview) and in further view of Wang (US 2002/0184368 A1).

25. Regarding claim 18, Bowman-Amuah together with M.Green taught the method and system of content delivery system according to claim 17, as described above.

Bowman-Amuah further teaches second interface module (DNSI) is configured (**Configuration management of traditional cline/server applications, which tend to be physically distributed across both the client and server see col.27 lines 44-57**) to communicate with the Directory Name Server (DNS) (**Directory services managing information about network resources involves a variety of processes ranging from simple name/ address resolution see col.55 lines 55-61**) to update respective tables on the basis of signals indicating quantities from the following group comprising:

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ID of the operation to be carried out on the table of said server, such as addition or deletion (**Access services that enable an application to retrieve data from a database as well as manipulate: insert, update and delete in the database see col.51 lines 40-47**), type of register, name of the domain to which the message refers (**Naming pattern describes a pattern for registering and finding services or objects see col.215 lines 26-30**), entire URL of the content to which the message refers (**Database services providing access to a local or a remote database, maintaining integrity of the data within the database and supporting ability to store and identify data in the physical platform see col.48 lines 56-64**),

M.Green teaches a system for implement internetworking of a set of Content Delivery Networks, the networks in said set being provided with respective caches, respective to Directory Name Service. M.Green further teaches the interface components (CIG) communicate via a CNAP protocol (**A common protocol for the advertisement of content see Page 21 section 4.4.3 Advertising Requirements**).

Bowman-Amuah together with M.Green do not explicitly the content delivery system discloses IP address of the best cache to serve said domain, and life time of the register.

Wang teaches a network system is provided for management of hierarchical service and content distribution via a directory enabled network to improve performance of the content delivery network with network infrastructure to include IP address of the best cache to serve said domain (service site IP address ¶[0094]), and life time of the



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register (Cached content time see col.3 ¶[0063]. Wang further provides the advantage of improve performance of the content delivery network.

It would have been obvious to one of ordinary skill in the art, having the teachings of Bowman-Amuah, M.Green and Wang before them at the time the invention was made to modify the content delivery network of Bowman-Amuah to includes IP address of the best cache to serve domain and life time of the register as taught by Wang.

One of ordinary skill in the art would have been motivated to make this modification in order to improve better performance of the content delivery network in view of Wang.

26. Regarding claim 19, Bowman-Amuah together with M.Green and Wang taught the method and system of content delivery system according to claim 18, as described above. Wang further teaches the interface component for implementing content delivery network internetworking, wherein said core module comprises a memory hosting a data structure containing information on the state of the respective Content Delivery Network and similar internetworking networks (Retrieval from neighbor cache service engine is managed by the service manager in the same LAN see page 6 ¶[0149]).

**Conclusion**

The following prior art made of record and not relied upon is cited to establish the level of skill in the applicant's art and those arts considered reasonably pertinent to applicant's disclosure. See **MPEP 707.05(c)**.

The following reference teaches execution of trial data.

US 6,332,163 Bowman-Amuah  
US 6,208,345 Sheard et al.  
US 6,694,371 Sanai  
US 2002/0010794 A1 Ben-Shaul et al.  
US 2003/0126195 A1 Reynolds et al.

The examiner requests, in response to this Office action, support be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

When responding to this office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections See 37 CFR 1.111(c).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guang Li whose telephone number is (571) 270-1897. The examiner can normally be reached on Monday-Friday 8:30AM-5:00PM(EST).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

June 8, 2007  
Guang Li  
Patent Examiner



**JEFFREY PWU**  
**SUPERVISORY PATENT EXAMINER**